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The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me
Scire alius sciret.

MARCH, 1923.

THE DIAGNOSIS OF PEPTIC ULCER AND ITS BEARINGS ON TREATMENT.

BY

T. CARWARDINE, M.S.,

Surgeon to the Bristol Royal Infirmary.

PAIN, hæmatemesis and vomiting were regarded formerly as signs of peptic ulcer. They are known now to be utterly unreliable as signs, both singly and collectively.

The symptomatology of peptic ulcers needs to be written afresh on a clean slate, and more consideration paid to various conditions which mimic the symptoms. On short reflection it is obvious that there is something radically wrong. Duodenal ulcer is far more common than gastric ulcer, and chronic gastric ulcer is rather more common in men than in women, yet how much more frequently are women treated than men for the condition when it has not been proved to exist! As Carman says, no other organ in the human body to-day has been accused of so many disorders which it never had as the stomach.[1] This applies particularly to women, with more numerous reflex possibilities. There

is a difference between the sex incidence of peptic ulcer diagnosed clinically and that determined by actual inspection at operation or post-mortem.

During the last year, of the cases referred to me for operation for supposed peptic ulcer (commonly diagnosed gastric), in only about one-third has the diagnosis proved correct, and in eight consecutive cases only two showed the lesion diagnosed and for which the patients had been treated, maybe for years.

When really present peptic ulcer is a serious disease. It is probably true that if cure does not take place in four or five weeks under medical treatment 25 per cent. of uncured cases will die unless surgical aid is resorted to. Of the 500 cases at the London Hospital in five years (1897–1902) 18 per cent. died and 40 per cent. relapsed.[3] 10 per cent. of the deaths were due to perforation, and of the relapsing cases some must have ended in cancer.

The signs of peptic ulcer may be classified as on opposite page, and must include the X-ray findings which have been grouped clearly by Carman.[2]

In this classification the following points may be noted :—

1. The **direct** signs are either X-ray findings or complications.

2. The **indirect** signs are reflex, inferences from X-rays, and effects of involvement of neighbouring organs.

3. The **corroborative** are clinical (and chemical) and X-ray signs, chiefly of retention.

4. The **groups** are classified: *horizontally*, for comparison of gastric and duodenal signs; and *vertically* in alignment, for the signs and symptoms in the first column and for X-ray findings in the second column.

X-ray Diagnosis.—X-ray photography is becoming by far the most accurate means of diagnosis, and is destined

SIGNS OF PEPTIC ULCER.

GASTRIC.	DUODENAL.

ACUTE.

Young Women, 15–25, *e.g.* Burns.

CHRONIC.

A. DIRECT.

1. NIL.

2. COMPLICATIONS.

Hemorrhage.
Perforation.
Stenosis and Dilatation.
Tumour.
Vomiting (Retentive).

3. X-RAY. Pathognomonic.

1. NOTCH.
2. NICHE.
3. ACCESSORY POCKET.

B. INDIRECT.

1. NIL.

2. REFLEX.

Hyperalgesia *to pinch.*
Hyperæsthesia and Tenderness.
Pain (? + *increased tension*).
Rigidity (*reflex*).
Vomiting (*reflex*).

3. INVOLVEMENT.

Pancreas
Subphrenic Abscess.

4. X-RAY. Diagnostic.

1. ORGANIC HOUR-GLASS.
2. SPASMODIC HOUR-GLASS.
   Intrinsic (Belladonna Test).
3. GASTROSPASM.

C. CORROBORATIVE.

1. NIL.

2. CLINICAL.

Succussion Splash.
Retention, 6-hour +
Visible Peristalsis.
Hyperacidity (*exceptional*).
Test-Meal (*little value*).
Wasted + Anæmic.

3. X-RAY. Not diagnostic.

1. RETENTION, 6-HOUR +
2. HYPOTONUS.
3. IRREGULAR PERISTALSIS
4. STOMACH SHORT, WIDE, BAGGY.

A. DIRECT.

1. NIL.

2. COMPLICATIONS.

Hemorrhage } Chief risks.
Perforation }
Tenderness. Sometimes, slight.
Stenosis } Rare.
Tumour }

3. X-RAY. Pathognomonic.

1. DEFORMITY.
2. DIVERTICULUM.

B. INDIRECT.

1. NIL. *Quiescent intervals.*

2. REFLEX.

Hyperalgesia *to pinch.*
Hyperæsthesia and Tenderness.
Pain. "*Hunger.*" "*Nocturnal.*"
Hyperacidity. *Water brash.* Na_2CO_3
Flatulence. *Vomiting rare.*

3. INVOLVEMENT.

Gall-bladder. *Cholecystitis.*
Subphrenic Abscess.

4. X-RAY. Diagnostic.

GASTRIC HYPER-PERISTALSIS
(*3 or more waves*).

C. CORROBORATIVE.

1. NIL.

2. CLINICAL.

Relief by Alkalis.

Hyperacidity.
Test-Meal (*undoubted value*).
May look well, *sometimes fat.*

3. X-RAY. Diagnostic.

1. RETENTION, 6-HOUR +
2. RAPID PASSAGE *at first.*
3. HYPER-PERISTALSIS.
4. NORMAL GASTRIC OUTLINE
5. STOMACH LONG, TUBULAR.

JEJUNAL.

to exceed in precision all other clinical evidences. It is in comparative infancy as yet, but is going very strongly. Technique has improved, rapid exposures with consequent sharpness of outline are possible, and radiographers are accumulating experience in interpretation. Nevertheless, in the majority of cases the conclusions are based upon *indirect* effects at present, the reading of which requires considerable experience and judgment. It is at least a fascinating pursuit, and in a study of nearly 7,000 cases of dyspepsia during six months at the Mayo Clinic Carman claims to have made both positive and negative diagnosis accurately in 96 per cent. of cases.

Clinical Signs and their Mimicry.—We may now take these in order and discuss them critically :—

1. **Reflex symptoms of the disease.**—It is at once apparent that many of the manifestations are of the nature described by Mackenzie. (1) *Viscero-sensory :* pain, hyperalgesia, and their radiation. (2) *Viscero-motor :* rigidity and exaggerated reflexes. (3) *Viscero-central :* vomiting, depression. The reflexes expressed in the somatic sensory nerves have their origin in the three subdivisions of the autonomic nervous system (Langley [4]) : the sympathetic, the parasympathetic (or extended pneumogastric) and the enteric. The sympathetic reflexes concern chiefly the sensibility and musculature of the parietes ; the parasympathetic reflexes concern the vomiting, cardiac effects, headache and scalp tenderness (Head [5]), and in a direct way govern the tonicity and peristalsis of a hollow viscus ; and the enteric reflexes (Langley) are largely associated with the condition of one enteric segment with another (Keith's nodes and myenteric plexus [6]).

2. **Hyperalgesia** (to pinch of uplifted skin).—In describing the hyperalgesic areas of the abdomen, first discovered by Mackenzie in connection with gall-bladder

affections, Ligat indicates an area in the mid-epigastrium which may be a vestigial enteric reflex, having vertical extension but not segmental distribution.[7] He states that he found it in 50 out of 80 cases of gastric and duodenal ulcer, that the area indicates the organ at fault, and that the hyperalgesia is a more reliable guide than the history. My observations agree with those of Sherren, that hyperalgesia is no certain guide to gastric ulcer.[8] I am disposed to regard the hyperalgesia as associated with increased tonicity and peristalsis of the gastro-duodenum, even if it be due to an extra-gastric cause such as appendix trouble.

A woman sent in for gastric ulcer, with vomiting and violent pain, had hyperalgesia (and tenderness) in Ligat's epigastric area, and also over the 10th dorsal spine. No ulcer was found, the stomach exhibited spasm, the appendix was removed, both hyperalgesic areas disappeared after the operation, she has been able to eat anything since and remains well.

A patient with adhesions following a former gastro-enterostomy had epigastric hyperalgesia to pinch. The adhesions were set free, and the patient's hyperalgesia and pain disappeared after operation, although there was a thick mass near the pylorus representing the former ulceration.

3. **Muscular Rigidity.**—This Viscero-motor reflex is similar to that which occurs with joint troubles (Hilton's Law[9]), but is only met with in peptic ulcer when the peritoneum is involved. With sudden perforation there is immediate and extreme rigidity, which may pass off until the peritoneum is inflamed.

4. **Tenderness** from cutaneous hyperæsthesia is a Viscero-sensory reflex,[10] and may be present in the epigastrium, or in the back over the 7th, 8th, and 9th ribs, where it corresponds with the posterior primary division of the 6th, 7th and 8th dorsal nerves. But it is *a very unreliable sign* of peptic ulcer, and may be absolutely misleading.

A lady had such extreme tenderness in the left upper epigastrium with vomiting that the diagnosis of gastric ulcer was agreed upon. There was no ulcer, only numerous omental adhesions to an old scar. The patient was well for a month after operation, then the vomiting and symptoms returned.

The difficulty of assigning the reflex phenomena to a particular organ is enhanced in the upper abdomen by the limited area of the dorsal cord involved in the reflex. It seems to be definitely established (for pain) that in the dog the whole of the mesenteric supply of the viscera of the upper abdomen as far as the middle of the small intestine is connected centrally with only two dorsal segments, the 6th and 7th (Kappis[11]). On the theory of the radiation of impulses from one cell to another in so limited an area it is conceivable that several organs may give similar reflexes. An epigastric reflex is not necessarily a gastric one.

5. **Pain.**—An ulcer of the leg is painful because it involves somatic sensory nerves. A peptic ulcer must be essentially painless because a hollow viscus is insensitive to tactile and painful stimuli.

Experimental physicians have taught this (Mackenzie, Head, Crile[12] and others), and Hurst (Goulstonian Lectures[13]) showed that the only adequate cause of true visceral pain is tension ("vital" contraction against tension—Mackenzie). An ulcer of the stomach or bowel may be touched, cauterised, or treated with strong acids without pain. Surgeons remove large portions of extruded bowel painlessly, and open the gut without any sensation whatever, in the absence of anæsthesia, except when the mesentery is dealt with. With peptic ulcer remaining constant the patient experiences exacerbations of pain. In duodenal ulcer the pain is actually relieved when food is passing over the ulcer. Wilkie cured pain of thirty years' duration by an anastomosis which left the existing ulcer alone.[14] In food-allergy a subcutaneous injection of the extract causes abdominal pain.[15] Muller

and Ravdin found an absence of previous pain in nearly 25 per cent. of cases of perforated ulcer.[16]

Some years ago a doctor sent his servant under my care with sudden perforation, with no previous pain. A nurse, with no previous pain, died recently from hemorrhage from a gastric ulcer the size of a threepenny-piece.

True visceral pain has only been proved to be due to one cause—contractions against tension or resistance (Cannon and Washburn[17]). An extra-visceral and accessory factor is probable—mesenteric drag (Tyrrell Gray[18]). In hyperchlorhydria, hypertonicity and in the pangs of hunger we have the contractions causing the only known effective stimulus for visceral pain, the pneumogastric initiating the stimulus and the painful sensations being conveyed by the sympathetic. The " bowels of compassion " have thus a physiological explanation.

6. **Hemorrhage** (Hæmatemesis and Melæna).—This is a fruitful source of error. Operative experience shows quite definitely that at least 50 per cent. of cases of hæmatemesis and melæna are *not* due to chronic peptic ulcer. In the absence of alcoholism, blood and splenic disease, the appendix and gall-bladder are responsible for most cases of bleeding unassociated with chronic ulcer.

The *Appendix*.—In 5 out of 24 cases of appendix dyspepsia the patients had vomited blood. In one case the stomach was opened and found to be " weeping blood " (Paterson[19]).

A woman, aged 40, seen three years ago, had indigestion for twelve months after every meal at the age of 17, and finally brought up blood. At 19 she was treated for gastric ulcer. At 30 she vomited " 4 pints " of blood. At 31 had severe hæmatemesis and was in bed for six months. At 38 there was recurrence, followed by two years of constant pain to the left of the umbilicus and through to the back, increased directly after food. At the operation over two years ago there were persistent and prolonged contractions of the stomach, which was opened, but no ulcer found. The appendix, adherent and kinked, was removed. Her doctor writes : " She has had no further return

of the hæmatemesis, and is able to do more than she was before."

A gentleman, over 70, had indigestion all his life, the pain being relieved by alkalis. Six months ago he had hæmatemesis and melæna. At the consultation there was a chamber-pot a quarter full of blood. A perforated and bleeding duodenal ulcer was diagnosed, but at the operation he had a gangrenous appendix with stinking pus in the pelvis and right loin. No lesion of the duodenum could be felt, and about an hour after he turned pale and died, apparently from recurrent hemorrhage.

A patient sent in with hæmatemesis and the diagnosis of ulcer "sighed and died" the afternoon before the proposed operation. At the post-mortem there was no ulcer. The stomach was hyperæmic, the intestines were purpuric, and both were oozing blood. No emboli or infarcts.

The *Gall-bladder* is responsible for more cases of hæmatemesis than we realise. Rankin had 55 cases of gall-bladder disease with hemorrhage; in 20 the gall-bladder disease was not diagnosed, but the bleeding ceased in most cases after operation.[20]

A history of bleeding may be obtained in 5 per cent. of gall-bladder cases (Crispin[21]), and cases have been recorded by Judd,[22] Deaver,[23] Kelling,[24] and others.

A woman had her appendix removed in London, and later an operation for stomach trouble with bleeding. In the summer of 1922 a colleague asked me to operate on her: she was bleeding, had hyperæsthesia in the *left* hypochondrium, and possible jejunal ulcer was diagnosed. But we found that no gastro-enterostomy had been done. Last December her doctor sent her in again with a note: "She has very definite symptoms of gastric ulcer now and had a severe hemorrhage this morning." But on admission she developed pyrexia with pain and tenderness over the gall-bladder. After waiting some time I removed the gall-bladder, which was thickened, fatty, "strawberry," and buried in congenital adhesions, with some fluid in the peritoneum around. She left on the road to recovery without her gall-bladder, after a diagnosis of peptic ulcer on perhaps three occasions.

In several gall-bladder cases which have been diagnosed as peptic ulcer I have found the gall-bladder adherent by congenital or inflammatory bands in such a way as to

obstruct the duodenum. Occasionally the gall-bladder has been buried completely—even for a time indistinguishable from the intestine to which it was adherent. One patient had a seven years' history of supposed duodenal ulcer.

On the other hand, a patient with the diagnosis of gall-stones with pain between the shoulders, has turned out to have a duodenal ulcer. A physician recorded his own symptoms—diagnosed as cholelithiasis amongst other things shortly before his duodenal ulcer perforated.[25]

The Pancreas gave rise to symptoms diagnosed as peptic ulcer in the following cases :—

A patient had recurrent *hæmatemesis* for years. No peptic ulcer could be found. There was free fluid in the right hypochondrium. The common duct was dilated with large veins over it, above the part running *through* the head of the pancreas (? anatomical). Cholecystenterostomy (for hæmatemesis !) was done.

Whilst awaiting developments before operation for supposed duodenal ulcer a gentleman became jaundiced and cancer of the pancreas was discovered at operation.

Some years ago a patient was sent to the radiographer for X-ray diagnosis of possible ulcer. Whilst being X-rayed she was taken acutely ill with symptoms suggesting *perforation*. An immediate operation was done, *acute hemorrhagic pancreatitis* found, and I possess an X-ray photograph of this rare condition.

7. **Vomiting** is really of no true diagnostic value in the absence of pyloric obstruction. Nor is relief from pain after vomiting, for this relief occurs with appendix dyspepsia. It is a viscero-central reflex and may be initiated by central impulses ; for the persistent vomiting of young women, when pyloric obstruction is absent, is usually hysterical. It may be serious. In 1909 a patient died suddenly at the Bristol Royal Infirmary during an attack of vomiting.

A nurse was thought to have a possible ulcer and to require operation. In course of examination a retroverted uterus was detected by rectal examination. Its replacement cured her vomiting.

An experienced physician treated a patient for hysterical flatulence; but finding he could not cure the patient asked me to explore, as he did not wish to overlook anything. Duodenal ulcer was found.

8. **Test Meals.**—Much energy has been expended on test meals, but the results have not met expectations. Of 1,200 cases, 400 of which came to operation, the chemical and microscopical examination of the gastric contents proved of little value (W. J. Mayo[26]). S. Fenwick gives the causation of hypersecretion roughly in these proportions: ulcer 4, appendix 2, gall-stones 1,[27] and states that the symptoms of chronic duodenal ulcer occur in all forms of hypersecretion and in proportion to the excessive acidity. W. J. Mayo says that 88 per cent. of cases of hypersecretion have lesions in the digestive organs, and 12 per cent. of the cases are due to the appendix, the removal of which will generally effect a cure.[28] Our President, quoting Friedenwald, indicated that in duodenal ulcer the acidity is normal in half the cases, and of the remainder it is excessive or diminished in the proportion of 2 to 1.[29]

Mr. Jackman, Surgical Registrar at the Bristol Royal Infirmary, has tabulated the test meals of 1922, 37 tests on 30 cases, the paucity showing that the test is not in much favour now.

TEST MEALS AT THE BRISTOL ROYAL INFIRMARY DURING 1922.

	Acidity.			
	+	N	−	
Duodenal ulcer found	—	1	—	
Gastric ulcer ,,	—	—	1	
Gall-stones ,,	—	—	1	
Cancer ,,	—	—	1	
Cholecystitis ,,	—	—	1	
Gastritis (? functional)	—	—	1	
Various (No Op., No P.-M.)	6	3	15	(Total 30)

Proportion of Free HCl to Total Acidity
(Normal about one-third).

	Over one-third.	Under one-third.
Duodenal Ulcer ..	2 (1 Op.)	0
Gastric Ulcer ..	3 (1 Op.)	2

(On clinical diagnosis, except 2 operations.)

The newer and fractional methods of Rehfuss is said by Moynihan to be most informative. By this method some 20 per cent. of gastric ulcers show hyperchlorhydria against 70 per cent. of duodenal ulcers.

At the British Medical Association in 1920 it was proposed that the term "hyperacidity" should be abolished; and seeing that the mere suggestion of hunger has caused a great increase of HCl and motility in a hypnotised patient, it is obvious that central impressions play a great part in digestive secretion, and a patient may be literally "too tired to eat."

Cannon records an instructive case of a refined and sensitive woman whose test meal was completely upset by turbulent anxiety the previous night owing to her husband's drunken escapades.[30]

9. **Hunger Pain.**—The experiments of Washburn prove conclusively that hunger pain is due to contractions of the alimentary canal, the contractions rather preceding the sensations in point of time.[31] If food be eaten in hunger the stomach discharges its contents more rapidly (Haudek and Stigler), and the contractions continue after the vagus supply to the stomach has been destroyed (Carlson[32]). Hunger pain is met with in all forms of hypersecretion, and is often pronounced in biliary hypersecretion.

Some years ago a patient was sent to me with typical symptoms of duodenal ulcer—severe pain, relieved by food, and especially severe at night. At the operation there was only a breaking-down gland near the common duct and duodenum.

Two cases of right renal calculus have been recorded by Sherren causing hunger pain with high gastric acidity.

On the other hand, last May a patient had an operation for duodenal ulcer, but she had no hunger pain and her pain was relieved by vomiting.

Appendix dyspepsia.—This may be a definite entity or a trap for the unwary. Whenever there is the least tenderness in the appendix region, and particularly when there is a reference of the pain downwards towards the right lower abdomen, the appendix should be kept in mind. Hypersecretion and hyperperistalsis may be the effect of appendix trouble, and more active peristalsis than usual may be visible near the pylorus when the surgeon explores.

Braithwaite has associated a pyloric blush and enlargement of glands at the ileo-cæcal angle with this condition.[33] It must not be forgotten that, whatever the exact explanation may be, appendicitis may cause hæmatemesis and melæna.

Last year I removed the appendix of a woman with a ten years' history suggestive of ulcer, who had been on milk diet for three years.

Some cases have been mentioned previously under hyperalgesia and hæmatemesis. One patient had pain like a knife sticking into the abdomen for years after taking food; she was drawn double with the pain for two hours at a time.

But mistakes may be made the other way. Some years ago I removed the appendix of a girl of about 13, who was operated upon by a colleague a few months later for perforated duodenal ulcer.

Omental Bands have been found in several cases in which peptic ulcer seemed possible, as in the following examples.

A gentleman was invalided home from South Africa with the diagnosis of duodenal ulcer, confirmed in London and by us here. No ulcer could be found, to our surprise, but on turning up a large mass of omentum a band was discovered passing round the transverse colon, the size of the little finger. Its excision relieved the symptoms and the patient was on active service in the War.

A medical man, dyspeptic for several years, had a single lesion—a string-like adhesion to the small intestine at its lower third. The bowel above was healthy, below it was like that of a marasmic child. Subsequent to operation he could eat his evening meal in comfort, which he could not do before.

Abdominal tuberculosis may mimic the symptoms of ulcer very closely.

Three years ago a patient was sent in for possible ulcer. Exploration revealed tuberculosis of the upper abdomen. The patient does not accept that diagnosis, and the Medical Defence Union is prepared to defend his threatened action.

A patient was admitted for "gastric or duodenal ulcer," the chief symptoms being vomiting and dyspepsia. There were present caseous glands at the splenic flexure, tubercles on the cæcum, and various adhesions.

There is dissatisfaction and there is hope. Dissatisfaction in our old beliefs; and that the recognition of peptic ulcer is so difficult, particularly on the gastric side of the pylorus; and hope that the X-ray diagnosis will help us in our difficulties in the future far more than in the past.

From a careful personal study of photographs during the last few months my hopes have been converted into a strong belief that more accurate conclusions are in view.

REFERENCES.

[1] Carman, R. D., *Collected Papers of the Mayo Clinic*, 1920, xii. 41.

[2] Carman, R. D., *Ibid.*, p. 47.

[3] Moullin, Mansell, *Brit. M. J.*, 1902, ii. 1651.

[4] Langley, J. N., *The Autonomic Nervous System*, Part I., 1921.

[5] Head, H., "Certain Aspects of Pain," *Brit. M. J.*, 1922, i. 1.

[6] Keith, A., Cavendish Lecture, *Lancet*, 1915, ii. 372.

[7] Ligat, D., *Practitioner*, 1916, xcvii. 106; *Lancet*, 1919, i. 729.

[8] Sherren, J., *Lectures on the Surgery of the Stomach and Duodenum.*

[9] Hilton, *Rest and Pain*, 4th Edition, 1887.

[10] Mackenzie, Sir James, *Brit. M. J.*, 1921, i. 147; *Symptoms and their Interpretation*, 1909.

[11] Kappis, quoted by G. L. Labat, *Ann. Surg.*, 1921, lxxiv. 679 (reference not given).

[12] Crile and Lower, *Anoci-association*, 1914, 41.

[13] Hurst, A. F., *Goulstonian Lectures: on the Sensibility of the Alimentary Canal*, 1911.

[14] Wilkie, D. P. D., *Brit. J. of Surg.*, 1921, ix. 213.

[15] Duke, W. W., Quoted in *Brit. M. J.*, 1921, ii. 572.

[16] Muller, G. P., and Ravdin, I. S., *Ann. Surg.*, 1921, lxxiv. 223.

[17] Cannon, W. B., *Bodily Changes in Pain, etc.*, 1915; *The Mechanical Factors of Digestion*, 1911.

[18] Gray, Tyrrell, *Brit. M. J.*, 1922, i. 253.

[19] Paterson, H. J., *Tr. Roy. Soc. Med., Surg. Sect.*, 1910, iii. 187.

[20] Rankin, quoted by Judd, *Ann. Surg.*, 1922, lxxv. 461.

[21] Crispin, *Ibid.*

[22] Judd, E. S., *Ann. Surg.*, 1922, lxxv. 459.

[23] Deaver, quoted by Judd, *Ibid.*, p. 460.

[24] Kelling, quoted by Judd, *Ibid.*, p. 460.

[25] Irwin, S. T., *Brit. M. J.*, 1909, i. 979.

[26] Mayo, W. J., *St. Paul Medical Journal*, 1904.

[27] Fenwick, S., *Tr. Roy. Soc. Med., Surg. Sect.*, 1910, iii. 177.

[28] Mayo, W. J., *Ibid.*, quoted by S. Fenwick, p. 181, and by H. J. Paterson, p. 187.

[29] Friedenwald, quoted by J. A. Nixon, *Bristol M.-Chir. J.*, 1912, xxx. 255.

[30] Cannon, W. B., *Bodily Changes in Pain, etc.*, 1915, p. 17.

[31] *Ibid.*, p. 255.

[32] Carlson, A. J., *Amer. J. of Physiology*, 1917 and 1919.

[33] Braithwaite, Demonstration, Association of Surgeons, Leeds, May, 1922. Referred to by Moynihan, *Brit. M. J.*, 1923, i. 224.

UNSUCCESSFUL TONSIL AND ADENOID OPERATIONS.

BY

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ALL operations are not successful, and it is a useful experience to try to assess the reason by studying our own and other people's failures. With this object in view, I have looked through the records of a group of cases of individuals who have consulted me with symptoms which had not been

relieved by a previous operation, either by myself or another practitioner, for the removal of tonsils, adenoids, or both. I find that these cases naturally fall into two groups. Firstly, those in which the symptoms are due to the fact that the operation was imperfectly performed. I find that this was not a large group, only representing about a fifth of the total cases. Secondly, those in which the symptoms are due to some other condition, which is either a secondary result of the pre-existing tonsils and adenoids or is unconnected therewith.

I do not propose to deal further with the first group, except to say that the remedy obviously lies in the direction of greater care and thoroughness in carrying out the operation.

In the second group, of the conditions which are probably a direct result of tonsils and adenoids, nasal obstruction due to deflection of the septum, enlargement of the turbinals, or the two conditions combined, are those most commonly met with. We are all probably familiar with this type of patient, who when seen in early adult life presents a narrow nose with some degree of septal deviation, enlarged turbinals, high palate, crowded teeth, chronic mouth-breathing and frequently a deafness resulting from previous attacks of inflammation in the middle-ear. These conditions most frequently result in cases in which mouth-breathing has been practised for a considerable period, and their avoidance lies in the direction of earlier operation. I find that in this class of case the average age at which the operation was performed was 15 years. To get the best results an operation for tonsil and adenoids should be carried out as soon as decided symptoms are present. In the majority of cases the skeletal changes in the chronic mouth-breather take place at, or about, the second dentition, so that it is important, where symptoms are present, to operate before this age.

After a period of prolonged mouth-breathing, where these deformities have taken place, while operation on the septum and turbinals may give some relief, the individual is frequently condemned to be a permanent mouth-breather, partly owing to the inefficient airway and partly to the confirmed habit.

Another group of cases is that in which nasal discharge persists after an efficient operation. Such discharge in a child may be either the result of a suppurative rhinitis or of infection of the nasal sinuses, associated with adenoids as the primary condition. The removal of adenoids will usually clear up such a secondary rhinitis or sinus suppuration. A residue of cases is left, however, in which the rhinitis or sinus infection persists in spite of removal of the adenoids. Where sinus suppuration persists an intranasal operation will usually clear it up. On the other hand, some cases of suppurative rhinitis are only kept under control by nasal medication, and eventually after puberty are recognised as cases of typical atrophic rhinitis or ozæna. In cases in which a watery discharge with attacks of sneezing persists, often associated with asthma, the condition will usually be found to be one of so-called vasomotor rhinitis. This is an affection of the nasal mucous membrane, similar to that of the bronchial mucosa in asthma. These cases are, as a rule, not improved by the removal of a small amount of adenoids.

Inflammatory infections of the ears probably constitute the most important indication for the removal of tonsils and adenoids. When the operation is done sufficiently early the results are good. As is to be expected, however, a proportion of cases return for treatment to the ears, the damage which has taken place before operation being too extensive to permit of a complete recovery. There is, however, one other class of case in which it will be found that the deafness

is due to some other condition and is not the result of tonsils and adenoids, as, for example, a nerve deafness or otosclerosis. I have seen several cases in which great disappointment was occasioned by the lack of any improvement in the ear condition after operation which might have been avoided by a more careful aural examination.

We are all familiar with the fact that children with adenoids tend to have a typical intonation of the voice. On the other hand, it is a very frequent mistake to regard adenoids as the cause of gross speech defects. In one type of such defect, which is not very uncommon, the voice resembles that of an individual with a cleft palate, and this is probably at any rate partly due to a defect in the development of the palate, although no actual cleft exists. While I agree that it is very important to ensure that any child presenting a speech defect has its airway clear, it is of equal importance, if it is thought advisable to operate on such a case, to ensure that the relatives clearly understand that the operation cannot of itself cure the condition. I believe that not infrequently an attempt is made to remove non-existent adenoids in such cases. Cases in which there is a greater or less degree of mental deficiency require somewhat similar handling. A mentally backward child naturally requires every assistance that we can give it, but it is not a very uncommon mistake to regard the vacant expression and open mouth of imbecility as the results of adenoids. Two cases of this class which particularly impressed me have been children which, I believe, were suffering more from a mild degree of cretinism than from adenoids.

Chronic bronchitis in a child is not infrequently secondary to the infection of adenoids, and this fact is becoming increasingly recognised. On the other hand, I have recently seen a case in which the wheezing of a chronic bronchitis,

probably associated with some degree of asthma, led to a mistaken diagnosis of adenoids.

To sum up. A consideration of cases in which symptoms are not relieved by operation for tonsils and adenoids shows that this is only occasionally due to the inefficiency of the operation. In a larger proportion of cases it is due to insufficient care in the previous diagnosis, and more attention should be paid to the previous examination and weighing of symptoms. The operation is so frequently done, that it is tending to become rather a matter of routine.

LIGHT ETHER ANÆSTHESIA.

BY

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IN ether anæsthesia the depth of narcosis employed is a far more important factor than appears to have been generally recognised.

The task of forming an accurate estimate of the respective virtues of deep and light ether anæsthesia is, however, by no means a simple problem; the data obtainable from a comparison of operation results under the deep narcosis in vogue fifteen or twenty years ago with those of to-day do not afford much help, owing to the altered conditions obtaining in modern surgery. On the one hand, the "unfit" patient is nowadays often subjected to operations which formerly would have been regarded as of too severe a type for even the "fit" individual to stand; on the other hand, improvements in surgical technique have done much in reducing the incidence of shock. In these circumstances it is naturally difficult to assess the proportion of credit

for improvements which have occurred that is due to any one factor, such as a particular method of anæsthetisation.

My own experience has convinced me that with ether the light type of narcosis has many advantages over the deep type, and I believe that such doctrine is based upon sound principles. In fact, the mere probability that ether itself can produce symptoms of shock, by reason of its toxic action, suggests the need for careful limitation of dosage.

There are certain prejudices and factors which apparently prevent light ether anæsthesia from being used as generally as would otherwise be the case. Among these may be mentioned the following :—

1. A belief that deep anæsthesia affords better protection against shock.

2. A failure to recognise the potency of ether as a toxic agent.

3. The impression that deep anæsthesia is necessary for the production of relaxation suitable for abdominal work.

4. From the administrator's point of view there can be no doubt that the deep method is much the easier, especially in connection with abdominal surgery, in which class of case, however, it may be of the utmost importance to leave the patient, after operation, as free of the drug as possible.

Light anæsthesia may be defined as the stage in which the patient remains quiet, with the swallowing reflex in abeyance, the corneal reflex generally present, and in every other respect showing as little deviation from the normal as possible ; there should be no trace of cyanosis, no salivation, no suffusion of the skin, and only the slightest stimulation of respiration.

If we review these factors in detail, we find clinically every reason to discredit the belief that the protection

against shock which is afforded by a general anæsthetic varies directly with the depth of narcosis.

Experience shows that it is the rule rather than the exception to see patients who have been lightly anæsthetised stand even the severest operations with a minimum of shock; and such result is quite in keeping with the experimental data upon which Crile [1] based his classical pronouncement "that provided anæsthesia is complete there is no advantage to be gained, from the point of view of shock, in deepening it."

Further evidence bearing on this problem is provided by the experiments conducted by Mann, [2] in which he failed to induce shock in anæsthetised animals by trauma to the limbs, even though severe and continued for as long as two hours.

In the same series of investigations it was shown that deep ether anæsthesia was itself capable of producing shock without the aid of trauma. Similar results were obtained by Rice Rich, [3] who in addition was able to prove that *light* ether anæsthesia for one hour protected against shock.

Mann, [4] working on ether tensions in the blood, found that a fall of blood pressure began to occur when ether saturation had reached that point at which the corneal reflex disappeared, a significant finding if we regard the disappearance of this reflex as an indication that the stage of light anæsthesia has been passed.

As to the toxicity of ether, and the consequent necessity for careful dosage, it is an easy matter to show experimentally that in the case of vegetable and animal organisms it acts as a definite protoplasmic poison, and we are indebted to Crile for demonstrating the degenerative changes it can produce in human tissues when exhibited in sufficiently large doses, or for long enough time. Clinically there is naturally

difficulty in distinguishing between effects produced by the drug and those due to surgery.

When ether first took the place of chloroform in our practice, it brought with it a welcome sense of relief from the risk of what I may call "table" accidents, and we were wont to follow the old plan of keeping our patients with corneal and most of the other reflexes abolished. The resulting anæsthesia gave us a patient immobile during operation, but often very pale and nauseated and, in fact, suffering from many of the symptons of shock, after recovery to consciousness, even with the moderate surgery of those days. I believe that in this connection the surgeons actually robbed us of much of the blame to which we were entitled.

The growing popularity of ether brought with it an avalanche of new methods and machinery for its administration, and for each of these in turn was claimed the property of reducing or preventing shock. And the justice of the claim was soon established more or less definitely in each instance. But the one feature common to all these methods was a capacity for regulating the dose, and for maintaining an EVEN LIGHT ANÆSTHESIA.

The methods and apparatus referred to include: Roth Drager; Tyrrell; Stock; the Etherometer; Shipway; intravenous; intratracheal; combinations of ether with analgesics or with alkaloids, or with gas and oxygen.

These newer methods have enabled us to show that by dosimetric control of the strength of ether vapour administered we can practically eliminate that class of lung complication which is due directly to ether irritation, but we are still faced with chest sequelæ attributable indirectly to a state of lowered resistance to infection. The existence of such a factor is clearly demonstrated by experiences similar to those of Mikulicz, who owing to the frequency of chest complications abandoned ether for chloroform, with

the result that the number of these sequelæ increased, and subsequently met with a still larger proportion of such cases when he substituted local anæsthesia for chloroform.

In the work of Hamburger,[5] Haines, and others we have proof that ether anæsthesia, in the early stages, stimulates and, in the later stages, diminishes phagocytosis and lowers the resistance to infection. Dr. Todd, at the Bristol Royal Infirmary, has kindly confirmed these statements for me by means of culture and by opsonic index. Experimentally it has been shown that etherised animals develop pneumonia when pneumococcus culture is introduced into their trachea, whereas normal animals resist the infection. All investigators in this field of research agree that the depressing effect is increased by prolonging the time of exposure to the vapour or by a deepening of the narcosis.

The question of muscular relaxation, especially in abdominal work, calls for a good deal of judgment on the part of the administrator. It is remarkable how often good relaxation can be obtained without loss of corneal reflex, provided not a trace of cyanosis be permitted. And not infrequently when more relaxation is called for the required effect is to be obtained more satisfactorily by a lightening rather than by a deepening of the narcosis, as Buxton[6] has pointed out.

That it should be important to preserve as much as is convenient of the muscle-tone seems only rational when we consider the part played by tone in the circulation of the blood and in the maintenance of blood pressure. Local anæsthesia, fortunately, is very helpful in this respect, and enables us to obtain relaxation of a single muscle, or group of muscles, without reducing the whole body to a state of atony, from which, in my experience, patients may be slow to recover.

The rather important question arises as to whether loss

of muscle-tone may not be regarded as a cause as well as a result of "shock."

I have no doubt in my own mind that one reason which tends to make men chary about employing the lighter degrees of ether anæsthesia is the trouble it involves, such as the use of dosimetric apparatus, or, in the case of open ether, the need of counting the number of drops delivered per breath; nor is this all, for it is essential that the anæsthetist shall make himself intimately acquainted with the significance of even the minutest changes, both in the patient's reflexes and in the surgeon's facial expression.

I have seen a large number of patients with pulmonary tuberculosis undergo operation with the quiet anæsthesia of light ether without, as far as I know, a single case of activation; on the other hand, by administering gas and oxygen badly, in one instance at least, I undoubtedly stirred up a quiescent phthisis.

There may be no more general upset than is usual after gas, indeed I recall the case of an exsanguinated man, who after amputation through the upper third of the thigh for secondary hemorrhage, actually left the theatre smoking a cigarette.

REFERENCES.

[1] *Proceedings of Seventeenth International Congress, London*, 1913.

[2] "Peripheral origin of Shock," *Johns Hopkins Hospital Bulletin*, 1914, xxv. 281.

[3] *Johns Hopkins Hospital Bulletin*, xxxviii. 79.

[4] "Vascular Reflexes with Ether Tensions," *Am Year Book*, 1917 p. 99.

[5] *Archives Neerlandaises*, 1911.

[6] *Clinical Journal*, 1921, p. 28

INTRACRANIAL TUMOURS AND THE OCCURRENCE OF PAPILLŒDEMA.

BY

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THE presence of papillœdema (optic neuritis) in cases of cerebral tumour or abscess is of such great diagnostic value that a consideration of the factors which cause this sign to be present or absent may be of interest. I have recently had under my observation six patients in whom the existence of cerebral tumour or abscess was confirmed either by operation or necropsy.

The sites of the tumour or abscess were as follows :—

Three of the tumours were in the frontal region.

One abscess in the optic thalamus.

One tumour in the occipital lobe.

One tumour in the pons.

CASE 1.—D. P., æt. 19, was admitted to the Bristol General Hospital suffering from increasing loss of vision and facial palsy.

On examination.—There was facial paralysis on the left side, conjugate deviation of the eyes to the right, left pupil did not react to light. Vision, right, perception of light; eft, nil. The fundi showed, right, definite papillœdema with hemorrhages and white patches; the left, marked consecutive trophy.

Operation.—From the above signs the cranium was opened on the left side, but the tumour was found to be irremovable.

Post-mortem.—The tumour was found to be a rapidly-growing gliosarcoma in the pons on the left side in the region of the sixth nerve nucleus.

CASE 2.—Mrs. C., æt. 28, had suffered from severe and intractable headache following a motor accident, and presented other signs and symptoms indicative of a cerebral lesion. Immediately subsequent to the accident she suffered from diplopia; this, however, proved to be transient.

Vision.—Fair in each eye, the left worse than the right. She could not be corrected to full vision.

No lesion of ocular muscles; pupils reacted equally to light and accommodation.

Fields of Vision.—The right inferior quadrant of each field was defective. Small objects could not be seen. There was, however, a relative scotoma for larger objects in which a two-shilling piece could be recognised as "something," but no idea could be formed as to its nature.

Light thrown upon the defective area was followed by reaction of the pupils.

Discs.—Both showed marked swelling, the left more in amount than the right, hemorrhages and white patches being present in both.

The fields of vision and the presence of a relative scotoma localised the tumour in the cortex of the left cuneus.

Operation.—A gliosarcoma was found involving the cortex of the left cuneus.

CASE 3.—J. M., æt. 8. This girl had been in fair health until a fortnight before admission, save when she had suffered from bilateral middle ear disease with intermittent discharge from her ears ever since.

She first became dull and heavy on November 14th, was admitted on November 28th, when she was found to be irritable with a vacant stare—photophobia, and general tenderness and stiffness of her neck muscles. Urine normal on admission.

Course.—She soon began to suffer from short bouts of unconsciousness accompanied by signs of cerebral irritation, restlessness, etc., with attacks of severe vomiting. Kernig's sign gradually developed. One month after admission 0.3 per cent. albumen appeared in the urine. Three days after the appearance of albuminuria she began to suffer from short convulsions lasting about one minute, with twitching of the face and limbs; these ceased, however, after lumbar puncture. One week later she had bleeding from the rectum, kidney and mucous membrane of the mouth; at this time much pus was found in the urine.

Fundi.—Moderate bilateral papillœdema, with hemorrhages on left disc, none on right; no evidence of œdema of hemorrhages or exudation in the retina. A later examination showed the same characteristics; at this time, however, slight weakness in movement of the eyes to the right was present.

The left eye was the one in which the papillœdema had first appeared.

Cerebro-spinal fluid.—November 30th, less than 10 cells in field. December 22nd, 40 cells, of which 90 per cent. were lymphocytes. December 31st, more than 500 cells to the field. The presence of the large number of cells in the cerebro-spinal fluid, together with the rapid onset of papillœdema, pointed to either an abscess discharging into a ventricle, or tuberculous meningitis (acute).

Post-mortem.

1. Acute ascending nephritis with sloughs of bladder.
2. Small extradural cholesteatomatous mass found at junction of squamous and petrous temporal, not in connection with either the middle ear or lateral sinus.
3. Excess of clear fluid in the ventricles.
4. An abscess one-third square inch in left optic thalamus surrounded by a larger hemorrhagic zone, with engorgement of the overlying ependyma. Microscopically this abscess was shown to be discharging into the lateral ventricle.

CASE 4.—P. B., æt. 19. In 1920 this patient had a motor-cycle accident, striking his right frontal region.

In the latter end of 1921 he suffered from headache. On December, 1921, he had a fit with twitching of the left side of the body, accompanied by severe headache and vomiting.

This fit was succeeded by many others, still accompanied by headache and vomiting. Lumbar puncture relieved this condition for a time, causing freedom from fits for four months. After this time had elapsed they recurred, with headaches which were more severe in character. I saw him shortly after this second attack, and found bilateral papillœdema, the left disc being the more swollen. (It is interesting that I had seen this patient before this accident, and found his fundi normal, a small degree of hypermetropic astigmatism only being present.) The fits and localising signs, however, pointed to a right-sided lesion. The diagnosis of a tumour in the right pre-Rolandic area was made. At the operation a large endothelioma, 2½ in. by 2 in., was found growing in the right frontal region. This was successfully removed.

CASE 5.—M. A., æt. 27. This patient was first seen by me in out-patients for headache. No lesion of the fundus was then seen, and no refractive error found. She had, however, in the right frontal region an irregularity of the skull, and the left side of the body was markedly wasted; this wasting she stated had been present since she was seven years of age. Three months later I saw her again; she had had in the meantime an attack

of "influenza" with headache and slight vomiting. Vision then 6/18 each eye, and papillœdema of each disc about 3 D., the two sides were equal. She was told that she should be admitted, but she did not come back for six weeks, when she was quite blind. Some time after admission her right side began to waste rapidly, and she gradually became weaker and died, the discs having passed into consecutive atrophy.

Post-mortem.—The following condition was found: a tumour in the right frontal region replacing most of the frontal lobe, compressing the head of the caudate nucleus and pushing it backwards, it also extended inwards forming a depression on the mesial aspect of left frontal lobe.

CASE 6.—J. M., æt. 67, admitted to the Bristol General Hospital stuporous and complaining of pain in the head but without any vomiting. Discs were found to have very deep physiological cups in each, were slightly red. No swelling of either disc was present, no hemorrhages or exudation found. There was a history of a previous prostatectomy.

Post-mortem.—A tumour, 1½ in. by 1 in., found in left frontal lobe and extending outwards. No sign of tumour on brain surface, mesial or lateral. The tumour was found to be a secondary carcinoma, origin from prostate.

SUMMARY.

Five of the cases showed papillœdema, and the sixth did not.

Cases 1, 2, 4 and 5 were of comparatively long duration. Cases 3 and 6 were of comparatively short duration.

Case 1.—The discs in this case were markedly different, the right side still showing papillœdema, whilst the left (that on the side of the lesion) showed consecutive atrophy.

The presence of facial palsy and conjugate deviation of the eyes pointed to a lesion of the left side of the pons.

Case 2.—The discs were in the advanced stage, white spots having appeared on the upper nasal edges of the discs.

The presence of a positive scotoma of a part of the field of vision (homonymous in type) with a marked relative scotoma showed that the lesion was situated in the region of the left cuneus.

Case 3.—Hemorrhages present in one disc only, and that on the same side as the lesion.

Bilateral papillœdema with hemorrhages on left disc only. This condition showed that the swelling in the left disc had been present before the right.

This patient had had bilateral ear disease. Examination showed that the aural condition was satisfactory; also no signs or symptoms pointing to involvement of the temporo-sphenoidal or cerebellar regions were found. Although albuminuria was present, the appearance of the fundi were not characteristic of renal disease.

The rapid increase in the number of leucocytes in the cerebro-spinal fluid pointed, however, to abscess. From this the suggestions were made that it was either an abscess discharging into one of the ventricles, or tuberculous meningitis with considerable hydrops venticuli.

The case is a particularly instructive one; the presence of such a small abscess giving rise to marked intra-ocular signs, together with the fact that the abscess was discharging across into the ventricles, is worthy of record.

Case 4.—Unequal swelling of the discs, the disc showing the greater amount of swelling being on the side opposed to the lesion.

The left disc in this case was the one which showed the greater amount of swelling; therefore, according to Sir Victor Horsley, the tumour should have been on the left side. Can the fact that the ocular signs were contra-lateral be explained?

Leonard Hill, in his *Physiology and Pathology of the Cerebral Circulation*, points out that the presence of the falx cerebri is a factor which interferes with the ability of the cerebro-spinal fluid (if under pressure) to exert that pressure equally in all directions.

In this particular case the tumour was growing from the

meninges in the right frontal region, and therefore in its growth tended to press the frontal lobe backwards and to the left (part of this increased pressure to the left would be taken up by the falx).

The optic nerve before it enters the optic foramen lies in close relationship with the frontal lobe, therefore increases of pressure on the frontal lobe would be transmitted uniformly through the thickness of the brain substance to the optic nerve. The right frontal lobe would therefore by its pressure obstruct the flow of the cerebro-spinal fluid along the right optic nerve sheath, thus accounting for the appearance of papillœdema in the left eye at an earlier date than the right. This theory is in direct opposition to that of Schieck, since if the latter were correct the presence of obstruction on the right side would have resulted in earlier papillœdema on that side.

Case 5.—The papillœdema in each eye was equal in extent.

In this case the tumour was of very large size, it had grown to such an extent that pressure was directly transmitted by the falx (which had been pushed to the left) to the left frontal lobe, it had also extended very far back and was pressing upon the caudate nucleus.

This case therefore differs from Case 4 in that the pressure was more directly distributed to the base and also to the opposite side.

Case 6.—No papillœdema present.

In this case the tumour was in the actual brain substance, and was extending in an outward direction. There was no sign of direct pressure from the tumour upon the base; the growing pressure was also directed away from the mesial aspect of the brain, whereas in the two preceding tumours of the frontal lobe the growing pressure was directed backwards, downwards and to the left.

Sir Victor Horsley in 1910 claimed that the eye in which papillœdema first became manifest was on the same side as the cerebral lesion, and brought forward a series of cases to support his contention. With Marcus Gunn he described the order in which changes appear in the disc. Shortly they are as follows :—

First sign.—Appearance of swelling of the upper and inner edge of the affected sign.

Second.—Differences in amount of swelling of the discs.

Third.—Appearance of hemorrhages on the disc.

Fourth.—Appearance of white spots on upper nasal edge.

Fifth.—Consecutive atrophy.

Mott points out that the cerebral veins are surrounded by an intercerebral prolongation of the subarachnoid.

Mamourian and Smith claim that the sorption of cerebro-spinal fluid takes place chiefly through the superior cerebral veins.

The choroidal plexus secretes the cerebro-spinal fluid.

Mamourian and Smith contend on these grounds that increased intracranial pressure is due to deficient absorption of the cerebro-spinal fluid by the cerebral veins, and any blockage, particularly of the venous sinuses, is responsible for the rise in pressure and consequent driving of the fluid forward into the subarachnoid space around the optic nerve. This, in their view, explains the rapid appearance of papill-œdema in cases where the sinuses are affected, *e.g.* middle-ear disease and complications, anæmia with longitudinal sinus thrombosis ; also in subtentorial swellings and those in the neighbourhood of the corpora quadrigemina.

Leslie Paton has stated that the ipsolaterality of papillœdema is not at all constant. My cases tend to show that tumours in the frontal lobe, although of large extent, may give widely varying appearances in the optic discs. They also seem to show that the direction and rate in which

the tumour grows are definite factors governing the appearance of papillœdema, and determining the side in which the swelling of the disc first makes itself manifest.

The three other cases, situated in the optic thalamus, occipital cortex and pons, showed definite ipsolaterality; the tumour in the pontine area showing the greatest difference between the two discs.

Progress of the Medical Sciences.

PSYCHIATRY.

Feeble-mindedness and Mental Deficiency (Amentia).—Since the passing of the Mental Deficiency Act of 1913 increased attention has been paid to the diagnosis, classification, and treatment of the feeble-minded. Within the past few months there have appeared a fourth edition of Tredgold's book,[1] and a fifth edition of Shuttleworth and Potts' work.[2] Both these are standard text-books for the use of the medical profession, and deal with the subject more particularly from the scientific and medical standpoint; but the general public, and more particularly the teaching profession and psychologists, have been showing a keen interest in another side of the question, namely the value of intelligence tests in the detection of mentally deficient children, in the grading of backward children, and in the discovery of children of superior intelligence. There is no doubt that in this subject the educationist has outstripped the doctor, and this is a matter for regret. Binet and Simon's[3] little book is still one of the best guides for the busy practitioner, but it has been thought that the tests are better suited to French than to English children, and Terman's Stanford revision and extension of the Binet-Simon intelligence scale is now very generally adopted. A condensed form[4] of the bigger book was published in February, 1922, and should prove of great service. Additional tests are constantly being invented, and a full account and criticism of these and many new tests will be found in the weighty volume recently issued by the Education Office of the London County Council.[5]

The magnitude of the problem of the feeble-minded may be realised from the following facts: There are roughly 100,000 feeble-minded in England and Wales; of these over 30,000 are

of school age, about one-half of whom are being educated in special schools at a cost of nearly half a million a year. The larger proportion of the feeble-minded population is dependent on the State from childhood. Few of the remainder are able to stand up to the competition of life, and between 20 and 30 years of age they too drift into institutions. Thirty per cent. of our workhouse population is feeble-minded, 10 per cent. of tramps, 10 per cent. of our asylum population, 25 per cent. of all women in workhouse maternity wards with illegitimate children, and ten per cent. of habitual criminals. Of the feeble-minded not in institutions it is found that in the country about one-half can earn a little, whilst in towns not more than a quarter can do so. One seldom or never finds a feeble-minded person earning a full wage. The burden on the State is one which will grow steadily and progressively, for the feeble-minded population grows more rapidly than the normal population, the average family of a feeble-minded woman being 7.5 as against the normal 4.3, while the mortality of such children up to 20 years of age is not greater than the average.

From a medical standpoint one of the most interesting chapters in Tredgold's book is that dealing with the pathology of amentia. He points out that the mental defect is the result of definite anatomical abnormalities, viz. numerical deficiency, irregular arrangement and imperfect development of the nerve cells of the brain, and that this arises from a defect of the germ cell which is inherited in the form of an innate predisposition to neuronic imperfection. Alcohol, tubercle and syphilis are the three chief agents in causing the germ degeneration. This view is one of fundamental importance, for it must profoundly influence both diagnosis and treatment. Only a small percentage of cases of feeble-mindedness are caused by grosser anatomical lesions, such as porencephaly, hydrocephaly, and mechanical and infective injuries to the brain at and shortly after birth.

The significance of this pathological finding is that it radically affects our views as to the aims and objects of treatment. It is obviously absurd to waste many years in trying to develop to a high standard the intellectual faculties of a person who is amented, and more and more attention will have to be paid to manual training. It was claimed for the Montessori system that the idiot could be trained to the scholastic standard of the ordinary child, but even if this were correct it would be of little value if the child can never rise to an independent existence free from supervision and external support.

In the *diagnosis* of feeble-mindedness too much attention has been paid to the so-called "tests of intelligence." For the most part these are largely educational tests in disguise,

and are best suited for the purpose of picking out children who are of exceptional mental ability or those who are backward. It cannot be too strongly emphasised that the diagnosis of amentia must be made on the lines of any other clinical diagnosis. First the family history must be carefully investigated, the personal history ascertained, with data as to the age at which dentition occurred, walking, and talking were begun, etc. Then a careful physical examination of the patient must be made in order that physical stigmata may be detected. Such stigmata are deformities of the head, jaws, teeth, fingers, or ears, evidence of poor nutrition, defective circulation, tics or habits. The last procedure is the application of mental efficiency tests, so as to determine the child's mental age. In our Bristol schools the intelligence tests as amended by Terman are in use, and the work is much simplified by the use of a printed sheet setting out the questions suitable for each age period, whilst spaces are provided for details, such as school proficiency, intelligence quotient, handwork, etc. Only by some such routine procedure is it possible to differentiate the feeble-minded from the imbecile or the idiot, and to classify the feeble-minded in groups according to their educational ability. The opinion must be formed on a survey of the whole facts of the case, not solely or chiefly on the result of mental efficiency tests. The difficulty in diagnosis is chiefly in distinguishing the high-class feeble-minded from the backward or retarded child. There is no hard and fast line between these two grades, just as there is no distinct line of demarcation between the idiot and the imbecile, or between the imbecile and the feeble-minded. In actual practice it is found that those children who are educated for a time in special schools, and are then capable of returning to the elementary schools, are nearly always backward and not mentally defective. In general terms the feeble-minded child cannot do tests higher than those set for 7 to 12 years of age. This is not always the case, however, and I have certainly known definitely mentally defective children who have reached such an educational standard as to enable them to keep their place in the elementary school, and indeed in some of the best public schools of the kingdom.

Much attention has been drawn lately to the subject of "moral imbecility" or "moral deficiency." Moral defectives are defined as "Persons who from an early age display some permanent mental defect, coupled with strong licentious or criminal propensities, on which punishment has had little or no deterrent effect." The greatest caution should be observed in making a diagnosis of moral deficiency, and the term should not be applied to the condition of the bulk of women who have illegitimate children in our Poor Law Infirmary wards, or to

the many juvenile delinquents who appear over and over again in the police courts. Undoubtedly many of these are feeble-minded, but few are moral defectives. There is at the present time too great a tendency to attribute lapses of conduct to moral deficiency, rather than to the defects of training, environment, and self-control to which the feeble-minded are subject. It is, of course, most desirable that the proceedings of courts having jurisdiction over children should be regularly attended and watched by a medical officer skilled in the detection of mental deficiency. In this way many errors of justice may be avoided, and defective children who have escaped the vigilance of the Education Authorities may be brought under suitable control and supervision. It is much to be regretted that Bristol is behind other provincial cities in this matter. The work of Dr. A. W. Potts at the Birmingham courts is well known.

The *treatment* of the feeble-minded is two-fold in its purpose; firstly to secure the safety and happiness of the individual sufferer, and secondly to protect the community against a gradually-increasing population of feeble-minded who are not only a financial burden but, from their anti-social tendencies, may be a serious danger to the public welfare. It cannot be too strongly emphasised that the feeble-minded parent begets feeble-minded children. Tredgold quoted as an instance of this the well-known Kallikak family :—

" A certain Martin Kallikak married in 1837. Both he and his wife were normal, and their descendants for six generations, numbering several hundreds of individuals, were traced by Dr. Goddard, and were also normal. But Martin Kallikak had an illegitimate child by a girl who was feeble-minded, and the descendants along this line in about the same number of generations who were living under the same environment in the same State yielded no less than 222 feeble-minded offspring out of forty-one matings."

It follows from this that in the case of the greater number of feeble-minded of both sexes who have reached the age of puberty and who are not subject to close personal supervision, one of two courses must be taken. Either they must be sterilised or they must be segregated. Popular sentiment in this country is opposed to the former course, and public opinion must be educated further in the matter. In America sterilisation of defectives has been practised since 1907. Furber states that the sterilisation of mental defectives has been practised in certain of the United States since 1907. Twelve States have enacted such laws, but in New York and Michigan States they have been repealed. Oregon State refuses to issue marriage licences unless the defectives submit to sterilisation. The total number of operations since 1907 is 4,313. The operations

selected were, in the male, division of the vas deferens, and in the female ligature of the Fallopian tubes. There is need at the present time of legal enactment forbidding the marriage of any feeble-minded person.

It has been suggested that many high-grade feeble-minded adults might reside in hostels from which they might go to their daily work. The head of the hostel would advise them in monetary affairs and concerning employment, and would exercise a needed control over their behaviour. At the present time there are various farm colonies, laundry homes, and industrial institutions for the reception of adults who are certified under the Mental Deficiency Act, but the accommodation is totally inadequate, and to a very large extent defective children after reaching the age of sixteen years are drafted back to the imbecile wards of our Poor Law Institutions and County Asylums. The problem of the way in which the adult feeble-minded can be most profitably employed and segregated has yet to be solved.

The conditions in the case of juveniles are much better, and constantly improving. Everyone agrees that where home influences are favourable the defective child derives most benefit, and makes most progress, under the love and care of its own parents, and for these the special day schools are available. There is need, however, of training centres at which non-certified feeble-minded children beyond school age could be trained in domestic duties, or taught simple handicrafts, whilst still remaining under parental supervision.

A few of the institutions for the reception of defective children are philanthropic ventures, but for the most part they are provided by Boards of Guardians, at the request of the borough councils, and are supervised by the Board of Control. This division of responsibility does not make for efficiency or economy of working. The principle adopted is that of the education of the senses—dancing, singing, music, modelling, and appreciation of shade, weight and colour. Later manual occupations are introduced—gardening, farm work, boot and mat making, cooking, laundry work and mending. By these methods the child's intelligence is gradually awakened and then developed to its maximum value. The great difficulty at the present time is to find teachers who are trained to do this kind of work, and who are willing to undertake the tedious and difficult task of educating the defective child.

Operative treatment for microcephalic and hydrocephalic cases has now been abandoned. Organotherapy is practically confined to the use of thyroid in cretinoid cases. Psychotherapy has been tried in emotional cases, psychic epilepsy, and to control dirty habits, but has met with little success.

J. O. Symes.

REFERENCES.

[1] Tredgold, A. F., *Mental Deficiency (Amentia)*, 4th Edition; Baillière, Tindall & Cox, London.

[2] Shuttleworth, G. E., and Potts, W. A., *Mentally Deficient Children: their Treatment and Training*, 5th Edition, 1922.

[3] Binet and Simon, *Mentally Defective Children*, 1914; Edward Arnold, London.

[4] Terman, Lewis M., *The Measurement of Intelligence;* George G. Harrap & Co. Ltd.

[5] Burt, Cyril, *Mental and Scholastic Tests*, Report by Education Officer of the London County Council; F. S. King & Son Ltd.

[6] Culverwell, E. P., *The Montessori Principles and Practice;* G. Bell & Sons Ltd.

[7] Report of Conference on Mental Deficiency. *Brit. M. J.*, 1922, ii. 222.

Reviews of Books.

The Physical Examination of the Chest. By JAMES CROCKET, M.D., D.P.H. Pp. viii., 254. London: H. K. Lewis & Co. Ltd. 1922. Price 9s. net.—This book should be of great use to the advanced student and also to the practitioner. The author lays great stress on the necessity for general observation of the patient before examination of any particular system, and in these days of instrumental aid in diagnosis this is a point which should be very necessarily emphasised. The chapters of the book follow the methods of examination. Inspection, palpation, percussion, and auscultation are dealt with exhaustively, and they are preceded by a chapter on the anatomy of the thorax. An explanation of all the signs is given, which is a very good method of enforcing them on the memory and also gives interest to the reader. The chapters on X-rays in diagnosis and the examination of the larynx are a necessary adjunct to the examination of the chest. The subject-matter is expressed simply and clearly and the illustrations are excellent.

Artificial Limbs and Amputation Stumps. By MUIRHEAD LITTLE, F.R.C.S. Eng. Pp. vii., 319. London: H. K. Lewis & Co. Ltd. 1922. Price 25s.—The author of this book has had an almost unrivalled experience in the subject, having being engaged as principal surgeon at the Roehampton Hospital, which was devoted to limb-fitting work during the War, and

under the Pensions Ministry. During this time about 25,000 cases of amputation have been under his care. Two features of the book greatly enhance its value, the first being that the author has confined himself to practical consideration and made his work of comparatively small and convenient size; the second is that he has delayed publication until sufficient time has elapsed to allow mature judgment and experience to be brought to bear on the various types of limbs which are now available. After a short historical note, four chapters are devoted to a consideration of stumps and the special modifications of cinema plastic surgery, the relations of the natural joints to those of the artificial limb, and the consideration of the comparative usefulness of artificial arms and legs. The bulk of the book consists of a detailed description of artificial limbs suitable for all types of amputation, including those official patterns approved and standardised by the Pensions Ministry. As a book of reference this work is invaluable, and the numerous and clear figures and diagrams make it easy to follow the text. The great drawback to the book is the presentation of so many alternative appliances without clear indication as to the circumstances which should guide in choosing between one and another.

A Text-Book of the Practice of Medicine. By Various Authors. Edited by FREDERICK W. PRICE, M.D., F.R.C.P. Pp. xxxvi., 1,753. London: Henry Frowde and Hodder and Stoughton. 1922. Price 35s. net.—The Editor's aim has been to include within one volume a concise survey of the whole field of medicine. He does not think that any one man is capable of writing such a book, and for this reason he has invited a number of his colleagues, representing nearly all the London Medical Schools, to join him in his venture. The result is a very good book. In his preface Dr. Price says that his earnest hope is that the book may be considered a credit to the London School of Medicine, and this is indeed exactly what it is. It is reassuring to find it characterised by those virtues on which the London School has securely founded its fame. A respect for facts, and particularly for clinical facts, is apparent in most of the contributions. Moreover, the writers have not forgotten that the purpose of a teacher of medicine is to instruct students in the art of treating patients. Some of the newer subjects are allowed rather more notice than they deserve. For example, more space is accorded to trench fever than to measles, more to lethargic encephalitis than to tetanus. On the other hand, some of the articles are remarkably compact. The whole section on diseases of the endocrine glands, including an excellent little introduction on the relation of those glands to the sympathetic nervous system, occupies only 26 pages, yet there

is not much in the way of established fact that has been left out (although a word on the subject of vomiting in Graves's disease might not be amiss). The Editor's zeal for polygraphic and electrocardiographic records has rather outrun his discretion, otherwise there are very few illustrations. But the book is printed in a good type, and the use of a thin paper has kept the bulk within convenient limits. Though we must confess to looking back with regret on the passing of the "one-man" text-book of medicine, it must be admitted that it would be difficult for any one physician to achieve such a task at the present day. Even Sir William Osler's famous book did not include a section on mental disease, as this composite work does. Whether it is regarded as a compendious text-book for students or a concise book of reference for practitioners, this volume is sure of a warm welcome and a successful career. We doubt whether there is a better in the English language.

A Practical Handbook on the Diseases of Children. By BERNARD MYERS, C.M.G., M.D., M.R.C.P. Pp. xvi., 548. London: H. K. Lewis & Co. Ltd. 1922. Price 21s. net.—This work, Dr. Myers states in his preface, embodies twenty-one years' experience of practice in the diseases of children. The author, in view of the rapid advances made in certain special medical subjects, has entrusted the article on "the Biochemistry of Children's Diseases" to Dr. R. L. Mackenzie Wallis, Dr. John Eyre writes the article on "the Use of Sera and Vaccines," Mr. A. Rocyn Jones is responsible for all surgical references to Orthopædics, Col. E. G. French has written "on Syphilis in Children," Mr. Montague Hopson on "the Teeth," Sir. W. M. Bayliss "the Physiology of Digestion," Dr. H. G. Adamson has revised the section of "Diseases of the Skin," Dr. T. Joeker is partly responsible for the description of "the Normal Blood in Children," and also has contributed "the Laboratory Methods of Diagnosing Tuberculosis." The early chapters of the book are distinctly good and full of information. The remainder of the book varies very much. The writer quotes largely from the writings of other authorities, and leaves the reader to form his own conclusions. We would prefer the reader to have had more of the author's own experience. The illustrations are excellent and there is a good index.

Atlas of Syphilis. By Professor LEO and ZUMBUSCH. 31 plates. London: John Bale, Sons and Danielsson Ltd. 1922. Price 30s. net.—In this Atlas the commoner and more typical syphilitic lesions are reliably represented in a series of coloured photographs taken direct from the living subject or from actual pathological specimens. The explanatory letterpress is clear

and concise. The Atlas should prove a valuable aid to students and practitioners in the identification of syphilis in the many guises which it may assume.

Cancer: its Cause, Treatment and Prevention. By A. T. BRAND, M.D., C.M., V.D. Pp. viii., 120. London: John Bale, Sons and Danielsson Ltd. 1922. Price 8s. 6d.—This is not a new book, but is a reprint of a series of addresses delivered to the East York and North Lincoln Branch of the British Medical Association, and published in the *British Medical Journal, Lancet* and *Aberdeen University Press* between the years 1902 to 1910. As these addresses are all on the same subject and deal almost entirely with its etiology there is a great tendency to repetition of theories and facts in each article. The author puts forward the theory that cancer is an auto-infectious disease like syphilis and tuberculosis, and further that it arises from without the body by infection, but this infection only occurs under certain favourable conditions, such as irritation, injury or senile degeneration. He allows that it is not as infectious as are many other diseases. His argument is that all diseases which are infectious to the individual are transmissible to others and have an external origin. Now cancer is infectious to the individual, therefore cancer is transmissible to others and has an external origin. The author quotes many cases of *cancer à deux*. He emphasises the existence of cancer houses, and condemns the Ministry of Health for not making cancer notifiable. Under treatment he states that surgery is unsatisfactory, that it is more than doubtful if any operative treatment is ever successful in the complete eradication of cancer, and quotes a case where recurrence occurred in the femur nine years after amputation of the breast. He advises the use of auto-serum. He draws off 10 c.c.m. of blood from a patient's vein, allows the blood to coagulate, and reinjects .5 c.c.m. of the serum every week under the patient's skin. No cases of cure are quoted after using this treatment. The book concludes with a quotation from Sir J. Bland Sutton on the danger of purveying the parasites of cancer in uncooked food and in water.

Le Médecin Devant L'Assistance et L'Enseignement Psychiatriques. By Dr. HENRI DAMAYE. Pp. 124. Paris: A. Maloine et Fils. 1922.—This little book, while professing to be a review of the present position of psychiatry in France, is actually a plea for the better and earlier study of mental disease, particularly in hospital and military practice. According to the writer, this branch of medicine is sadly neglected in France; in fact, outside asylum practice, there is no psychiatry. Yet, in the words which stand at the head of

one of his chapters, " The doctor's place is not among the incurables ; he should treat, relieve and cure."

Aids to Organotherapy. By Ivo Geikie Cobb, M.D., M.R.C.S. Pp. 178. London : Baillière, Tindall and Cox. 1922. Price 5s. net.—To attempt a critical review of endocrinology that shall indicate to the impatient reader what is fact and what is fancy in so small a space as that offered by this little volume is to court failure. Yet Dr. Cobb has achieved a measure of success sufficient to make the book a real help and a sound guide. There is, of course, a good deal of speculative and hypothetical matter, but so far as any book of such modest proportions can help us to understand an unlimited and indefinite subject this book does so, and may therefore be recommended to the general reader.

The Heart as a Power Chamber. By Harrington Sainsbury, M.D., F.R.C.P. Pp. xii., 248. London : Oxford Medical Publications. 1922. Price 12s. 6d. net.—This small book, with the sub-title, " A Contribution to Cardiodynamics," is a discursive commentary, after the manner of an eighteenth-century treatise on medicine, on the newer cardiology. That it contains much that is wise and to the point was to be expected, when its author's long association with the experimental physiology of the circulation is recalled, and a perusal of its pages does not disappoint these expectations. It is the more to be regretted that the style affected by the writer is such that few, in these utilitarian days, will have the patience to sift the book carefully in search of the nutritive matter that is there.

The Practical Medical Series. Vol. I. Chicago : The Year Book Publishers. 1922. Price $3.—*The Practical Medicine Series* is evidently to be to America what the *Medical Annual* is to England. Volume I. is devoted to general medicine, and gives a comprehensive view of recent work and ideas, and although most of the papers are taken from the medical literature of America, yet a considerable number of English and European papers have been referred to. The book is interesting and readable, though in places the meaning is by no means clear. It is a pity that the proofs have not been more carefully read, for the volume shows many printers' errors.

Oto-Rhino-Laryngology. By Dr. Georges Laurens. Translated by H. Clayton Fox, F.R.C.S.I. Second English Edition. Pp. xii., 350. Bristol : John Wright & Sons Ltd. 1922. Price 17s. 6d. net.—The first edition was reviewed in this *Journal* for September, 1921. That now dealt with is a translation from the fourth (French) edition, which may be taken

as an indication of its success. The work is essentially practical in nature and profusely illustrated. The book is designed as a guide to the general practitioner in the diagnosis and treatment of diseases of the nose, throat and ear, and can be cordially recommended. By avoiding the description of operations which lie within the scope of the specialist, he has been enabled to deal in great detail with the question of diagnosis and of non-operative and minor operative treatment. Since this book reflects current French practice, it will be found in some minor respects divergent from the English. In this edition, however, the use of the metric system, referred to in the review of the first edition, has been abandoned.

Medical Classics Series: Selected Works of Thomas Sydenham, M.D., with a short Biography and Explanatory Notes. By JOHN D. COMRIE, M.A., B.Sc., M.D., F.R.C.P. Ed., Lecturer on Historical Medicine and on Clinical Medicine in the University of Edinburgh. 1922. London: John Bale, Sons and Danielsson Ltd.—In this small volume Dr. Comrie has given us a charming account of Sydenham's life and friendships and about one-third of his writings, including many of those diseases which he was the first to describe and of those clinical pictures which will remain true and valuable for all time. Sydenham set to work to observe and put down the actual clinical facts of disease as perfectly as the botanist described vegetable growths, because he held that the science of the time was quite incapable of explaining the causes, in spite of the flood of unproved theories, mechanical, chemical and others, which then dominated men's thoughts, and, what was worse, their prescriptions. How ably he built this foundation these selections show most beautifully, and it is just this intensive study of clinical symptoms that we to-day have still to complete. Though science is now much more fruitful, it is still far from explaining all, and we still tend to rely on unproved theories and to neglect the observation and weighing of facts, as Mackenzie and others have pointed out. Hence the value of a study of Sydenham to-day. Dr. Comrie has added a useful bibliography of his works, which shows how widely he was admired and read throughout Europe. Though like some of our students to-day he spent four years in fighting, he had ample time afterwards at Oxford for a study of his profession, first at Magdalen Hall, then at Wadham, and as a medical fellow at All Souls', where Millington, Willis, Wren, Boyle, and others were the scientific leaders of the time. With some of these he kept up a life-long intimacy. Dr. Comrie's all too brief biography tells us, too, of his stay at Montpellier, where he seems to have been much impressed with the teaching of Barbeyrac; and of his friendship with two

other men from the Bristol district, John Locke and Thomas Dover. Most of all, we value his exposition of Sydenham's methods of treatment, his reliance on the few drugs of tried value—bark, iron, liquid laudanum, and mercury—and his avoidance of the incredible mixtures then in fashion. One is, however, apt to overlook Sydenham's own brief statement of his position in the epidemic diseases at the foot of page 101. The short introductions to each treatise are just what are wanted for understanding the text, and the book as a whole is a most illuminating and scholarly introduction to this "English Hippocrates."

Notes on Bacteriology for Dental Students. By F. St. J. Steadman, D.P.H., L.D.S. (Eng.). Pp. 48. London: John Bale, Sons & Danielsson Ltd. 1922. Price 3s. 6d. net.—Bacteriology has been gradually taking a more and more prominent place in medical and surgical work, but until quite recently the dental surgeons and, for that matter, the dental students have viewed it as a more or less interesting subject, with little or no application to their daily work. Up to date only two books on dental bacteriology have appeared:—

(1) *The Micro-organisms of the Human Mouth* (Miller).
(2) *The Mycology of the Mouth* (Goadby).

The first was composed by an American late in the last century, and the second composed by an Englishman, and published in 1902. Much valuable and interesting work has been carried out since those days. It is more than time that a book was forthcoming dealing with the subject in all its dental aspects. The book under review contains less than fifty pages. It is therefore impossible to deal with the subject in a comprehensive manner. In the preface the author explains that these "Notes" are intended for students who are not taking a practical course in bacteriology. It is therefore a matter for regret that Chapter ii., which deals with the methods of cultivation and investigation of bacteria, has not been more fully dealt with; and further that a brief description of the methods of taking cultures from the mouth and their inoculation into suitable media has been excluded altogether. This little book of "Notes" will prove exceedingly helpful in many ways. The author has clearly and ably dealt in a few words with the subject of the production of toxins, immunity, etc. Chapter v., in which the subjects of the opsonic index, agglutination and Wassermann reaction are described, is an excellent example of how much information may be conveyed in a few words. The publication of this book will help to draw attention to the subject with which it deals, and assist in placing bacteriological science in the position it should occupy in the practice of modern dental surgery.

Editorial Notes.

Light Ether Anæsthesia.

From 1896 onwards, while acting as resident anæsthetist at the Bristol Royal Infirmary, Flemming has systematically employed his open ether drop bottle method without chloroform.

In 1908, in his contribution at the meeting of the British Medical Association, London, Mr. A. L. Flemming showed that the "open-ether-light-anæsthesia" method sufficed to avoid cyanosis, and further exploded the fallacy that hemorrhage was more prone to occur in anæsthesia by ether as compared with chloroform. We welcome the short summary of Flemming's further fifteen years' experience in light ether anæsthesia.

To Bristol belongs the credit of the discovery of nitrous oxide gas anæsthesia in the year 1799, and although ether narcosis was the gift of America, we venture to claim for Bristol some credit for the early development of the open method and particularly what is fairly described as light ether anæsthesia. Prior to the early years of the present century, despite certain advantages over chloroform, ether anæsthesia almost connoted bronchial secretions with increased liability to hemorrhage, and perchance secondary pulmonary complications.

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Need of Opportunity for Research.

The Editor feels that in his personal trial of per-rectal anæsthesia with ether in saline solution in 1902 Flemming was only less unhappy than in his experimental subcutaneous injection of 5 per cent. ether in saline, for this, it appears, gave him so much pain that his thoughts turned to the question of intravenous

ether. In 1903, on applying at the University College for facilities to experiment on intravenous ether anæsthesia, he was discouraged by the difficulty in obtaining the necessary licence for any animal experiment. Though this at any rate would have been painless, we feel he wisely abstained from the risk of euthanasia by further trial on his own body. A year later, when Flemming and other anæsthetists were invited by the Bristol Dogs' Home Committee to advise on their method of killing dogs by painless anæsthesia, he asked permission to try what the late Mr. E. H. E. Stack suggested, viz. the intratracheal method of anæsthesia on dogs already anæsthetised, and which were anyhow to be killed without coming round. This was refused, consequently it was left to others to experiment on man. Years later the intratracheal method, one of the great advances in anæsthesic technique, was introduced by a German colleague. We regret that neither intravenous ether nor intratracheal anæsthesia came to us from Bristol owing to lack of facilities for the necessary observations.

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Postgraduate Activity.

THE postgraduate courses in medicine arranged by the University continue to attract widespread approbation. *The Morning Post* for March 10th, 1923, contained the following paragraphs :—

"The classes of Medical Practitioners for whom the opportunity for increasing and revising their knowledge is especially needed to include officers on study leave, etc., but most importantly for General Practitioners who desire to revise from time to time their methods and conceptions in accordance with developments since the science of their student days.

"EXAMPLE OF BRISTOL.

"There has been published this week in the medical journals the syllabus of a course which is available in connection with the University of Bristol, and which might serve as a model for all postgraduate schemes where the particular objective is to arrange revision classes for General Practitioners. In connection with certain postgraduate instruction, arranged from time to time at localities in the neighbourhood of Bristol, a classified list of demonstrations is published which are available for selection by the medical men of the neighbourhood. The syllabus covers, to speak generally, the whole of therapeutics, and the postgraduate students can choose the particular course, general and special, which suits their needs."

A course of eight weekly lectures is now proceeding at the University, and the Director of Postgraduate Studies will gladly supply any of our readers with full particulars. In addition, ample opportunities are available for those who wish to carry out clinical work in Surgery, Medicine, and the special subjects.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in September.

	March, 1923.
Mr. Hey Groves (1)	7 volumes.
Dr. R. G. Poole Lansdown (2)	1 volume.
Medical Research Council (3)	1 ,,
Dr. J. E. Shaw (4)	2 volumes.
J. Wright & Sons Ltd. (5)	1 volume.

Unbound periodicals have been received from Mr. Hey Groves and Dr. Shaw.

THE ONE HUNDRED AND SEVENTH LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Adami, J. G.... .. *Charles White and Puerperal Fever* 1922
Allbutt, Sir T. C.... *Notes on the composition of Scientific Papers* [3rd Ed.] 1923
Bainbridge, W. S. *Le Problème du Cancer* .. .. (1) 1922
Beesly and T. B. Johnston, L. *Surgical Anatomy* .. .. 2nd Ed. 1922
Bell, Sir C. .. .. *Anatomy and Physiology of Expression* (2) 3rd Ed. 1844
Blomfield, J. .. *Anæsthetics* 1922
Brown, W. L. .. *The Sympathetic Nervous System in Disease* 2nd Ed. [1923]
Brunet, J. C. .. *Manuel du Libraire.* 5 vols... 4me Éd. 1838–45
Burrows, H. .. .. *Mistakes and Accidents in Surgery* 1923
Carter, H. (Ed.) .. *The Church and the Drink Evil* .. .. .. [1922]
Cunningham's Text-book of Anatomy (Ed. by A. Robinson) 5th Ed. [1922]
Daniels and H. B. Newman, C. W. *Laboratory Studies in Tropical Medicine* .. .. 5th Ed. 1923
Friel, A. R. .. .. *Electric Ionization* .. .. .. [2nd Ed.] 1922
Fuchs, E. .. .. *Text-Book of Ophthalmology* (Tr. by A. Duane) 7th Ed. [1923]
Fuller, A. W. .. *Anæmia* 1923
Gamberini, C. .. *Sull' Epilessia postraumatica* .. .. .. (1) 1921
Gouernayle of Helthe, The (Facsimile Reprint).. .. .. .. (4) 1858
Hadfield, C. F. .. *Practical Anæsthetics* 1923
Ham, R. B. .. .. *Handbook of Sanitary Law* (Ed. by H. R. Kenwood) .. .. 9th Ed. 1923
Hauck, L. .. .. *Die Behandlung der Geschlechtskrankheiten* (5) 1922
Hewitt, Sir F. W. *Anæsthetics* (Ed. by H. Robinson) 5th Ed. 1922
Hinton, J. .. .. *The Place of the Physician* .. .. .. (4) 1874
Johnston, L. Beesly and T. B. *Surgical Anatomy* .. .. 2nd Ed. 1922
Keith, A. .. .. *The Engines of the Human Body* 1919
Korenchevsky, V... *Aetiology and Pathology of Rickets* .. (3) 1922
Lindsay, J. A. .. *Medical Axioms and Aphorisms* 1923
McKay, W. J. S. *Lawson Tait: his Life and Work* 1922
Myers, B. .. .. *Diseases of Children* 1922
Nesfield, V. .. .. *Ophthalmic Surgery* 1922

Newman, C. W. Daniels and H. B.	*Laboratory Studies in Tropical Medicine* .. .. 5th Ed.	1923
Price, F. W. (Ed.)	*Practice of Medicine*	1922
Rolleston, Sir H.	*Some Medical Aspects of Old Age*	1922
Romanis, W. H. C.	*Surgical Diagnosis* .. .. (1)	1923
Short, A. R. (Ed.)	*Index of Prognosis* .. .. 3rd Ed.	1922
Short, A. R. ..	*New Physiology in Surgical and General Practice* .. .. 5th Ed.	1922
Tidy, H. L.	*A Synopsis of Medicine* .. .. .. 3rd Ed.	1923
Voronoff, S.	*Greffes testiculaires*	1923
White, J. R. ..	*Clinical Examination of Surgical Cases* (1)	1922
Whitla, Sir W. ..	*Elements of Pharmacy* .. .. .. 11th Ed.	1923

TRANSACTIONS, REPORTS, JOURNALS, ETC.

American Ophthalmological Society, Transactions of the	Vol. XX.	1922
American Otological Society, Transactions of the	Vol. XVI., Pt. 1	1922
British Medical Journal, The	Vol. II. for	1922
College of Physicians of Philadelphia, Transactions of the	Vol. XLIII.	1921
Hospitals—		
St. Bartholomew's Hospital Reports	Vol. LV.	1922
Jahresbericht über die gesamte Chirurgie	(1)	1922
Lancet, The	Vol. II. for	1922
London Dermatological Society, Transactions of the		1922
Merck's Jahresbericht	XXXV. Jahrg.	1922
Ophthalmological Transactions	Vol. XLII.	1922
Royal Society of Medicine, Proceedings of the	Vol. XV.	1922

Local Medical Notes.

UNIVERSITY OF BRISTOL.—Undergraduates of the University have recently passed the following examinations:—

M.B., CH.B. BRISTOL.—*Second Examination, Part I.:* D. E. C. Andrew, J. C. Batt, A. M. Critchley, T. F. Hewer, R. Jackson, E. R. Wide. *Elementary Anatomy only:* B. J. Boulton, J. M. Camps-Campins, M. Srisvasti. *Part II.:* H. M. Aldwinckle, E. C. Bernard, W. P. Brinckman, M. E. Drew, G. L. Feneley, F. R. Gedye, A. P. Gorham, M. B. Harvey, T. P. Lalonde, E. May, C. B. Perry, L. B. Phillips, A. A. B. Vincent, T. M. White. *Final Examination: Pass (with second*

class honours) : F. J. Hector, M. G. Hughes, A. J. Keevill, D. M. Pullen. *Part II.* (*completing examination*) : B. A. Crook, J. M. Evans, F. M. Jones, J. A. L. Roberts, H. L. Shepherd, H. J. H. Spreadbury, F. K. Wilson. *Part I.* (*including Forensic Medicine and Toxicology*) : S. H. Blacker, A. P. Bodman, E. G. Bradbeer, G. B. Bush, W. L. Cossham, M. F. Dalton, F. R. Edbrooke, N. J. England, H. M. Golding, W. A. Gornall, J. L. Griffin, R. C. Hatcher, A. G. Heron, D. E. Joscelyne, P. C. Joscelyne, E. F. King, A. H. Marshall, J. R. Nicholson-Lailey, R. A. Sammons, A. E. Sherwell, H. Taylor, R. E. Whitby, C. F. Wilson. *Part I. only* : N. J. Bown, H. M. Dixon, L. Dunn, P. G. Evans.

L.D.S. BRISTOL.—*Second Examination* : W. H. Phillips, B. F. Taylor, L. H. Challenger, R. Lonnon, J. F. Rigg, J. K. Ritblat. *In Physiology and Histology and Anatomy only* : G. C. Brooks. *In Dental Anatomy only* : A. W. Cawsey, C. S. Cossham, R. G. Downes, D. Griffiths, C. H. Hill, H. F. D. Lane, E. W. Mogg, S. Phillips, B. F. Robinson, A. M. Thoseby, C. S. Wilde, C. P. Winstone. *Third Examination* : G. C. Brooks, C. H. Hill, E. W. Mogg. *Final Examination* : F. J. Farr,* H. W. Pidgeon,* G. G. Royal,* C. G. Saxon,* C. R. Woods.*

D.P.H.—Zako Khalid.

CONJOINT EXAMINING BOARD OF ENGLAND.—*Second Examination* : C. C. Chesterman. *Final Examination* : B. A. Crook,* J. M. Evans,* E. C. K. Kenderdine,* J. A. L. Roberts,* H. J. H. Spreadbury.*

L.D.S., R.C.S.—S. G. House.*

L.M.S.S.A.—*Midwifery, Medicine, Forensic Medicine* : C. S. Laurence.

* Denotes qualification.